

Non-Catalog Model

Frequency Mixer

GRA-1H

Level 17 (LO Power +17 dBm)

Important Note

This is a non-catalog model and can be manufactured on specific request.
Pricing and delivery information can be supplied upon request.



Please click "Back", and then click "Contact Us" for Applications support.

CASE STYLE : D08

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency	LO (fL to fU)	0.5		500	MHz
	RF (fL to fU)	0.5		500	MHz
	IF	0		500	MHz
Conversion Loss	mid band		5.9	7.5	dB
	Total Range			8.5	dB
LO-RF Isolation	Low Range	45	55		dB
	Mid Range	30	45		dB
	Upper Range	25	35		dB
LO-IF Isolation	Low Range	35	45		dB
	Mid Range	30	40		dB
	Upper Range	20	30		dB
IP3 Input		+27.5	+30		dBm
1 dB Comp. Input Power			+10		dBm

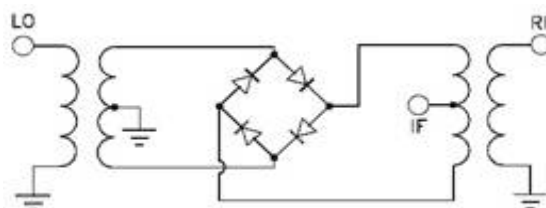
Notes: Low Range = [fL to 10fL] Mid Range = [10fL to fU/2] Upper Range = [fU/2 to fU]
mid band = [2fL to fU/2]

IP3 : RF Power = 0 dBm @ 200 MHz & 202 MHz , LO Power = +17 dBm @ 180 MHz

MAXIMUM RATINGS	
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	200mW
IF Current	40mA

PIN CONNECTIONS	
LO	1
RF	6
IF	4
GROUND	2, 3, 5

Electrical Schematics



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Typical Performance Data

RF (MHz)	LO (MHz)	CONVERSION LOSS (dB)			LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
		@LO (dBm)				@LO (dBm)			@LO (dBm)		
		+4	+7	+10		+4	+7	+10	+4	+7	+10
0.5	30.5	7.59	7.38	7.34	0.5	67.8	64.7	63.3	63.6	58.3	55.1
2.0	32.0	6.46	6.29	6.29	2.0	64.6	62.8	62.0	61.5	57.0	54.1
10.0	40.0	6.01	5.89	5.94	10.0	59.8	58.8	57.7	56.4	53.9	51.9
20.0	50.0	6.09	5.93	5.96	20.0	53.5	51.8	50.6	49.0	47.6	46.2
50.0	80.0	6.02	5.91	6.00	50.0	49.6	48.1	47.4	45.6	44.5	43.3
81.1	51.1	5.94	5.84	5.90	81.1	44.9	43.9	43.7	41.4	40.8	39.8
100.0	70.0	5.91	5.82	5.91	100.0	43.6	42.5	42.4	40.1	39.4	38.6
129.4	99.4	5.89	5.85	5.94	129.4	42.7	41.8	41.3	39.4	38.7	37.9
161.6	131.6	5.93	5.90	5.99	161.6	40.7	39.9	39.6	37.8	37.1	36.2
193.9	163.9	6.06	5.98	6.04	193.9	39.5	38.7	38.1	36.3	35.7	34.6
226.1	196.1	6.18	6.10	6.16	226.1	38.7	38.3	37.9	36.0	35.4	34.3
258.3	228.3	6.10	6.01	6.05	258.3	37.8	37.2	36.5	35.3	34.2	32.9
274.4	244.4	6.08	5.97	6.03	274.4	37.4	36.6	35.9	33.7	33.2	32.2
306.7	276.7	6.14	6.07	6.17	306.7	36.3	35.8	35.3	33.2	32.4	31.6
338.9	308.9	6.21	6.16	6.27	338.9	36.0	34.8	34.1	31.9	31.0	30.1
371.1	341.1	6.50	6.34	6.34	371.1	35.5	33.9	32.9	31.0	29.5	28.5
403.3	373.3	6.61	6.42	6.39	403.3	36.3	33.8	32.1	30.4	28.5	27.6
435.6	405.6	6.86	6.60	6.39	435.6	37.5	34.5	32.4	29.8	28.2	26.7
435.6	437.8	7.03	6.76	6.62	435.6	38.2	35.6	33.4	28.6	28.5	26.9
500.0	470.0	7.17	6.85	6.62	500.0	36.6	35.0	33.7	29.8	28.7	27.0

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Page 1 of 2



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Typical Performance Data

RF/LO (MHz)	RF VSWR (:1)			LO VSWR (:1)			IF (MHz)	IF VSWR (:1)			LO/RF (MHz)	max. DC output (mV)	DC Offset (mV)
	@LO (dBm)			@LO (dBm)				@LO (dBm)			@LO (dBm)		
	+4	+7	+10	+4	+7	+10		+4	+7	+10	+7		
5.0	1.23	1.26	1.28	1.95	2.93	4.04	5.0	1.47	1.30	1.17	0.5	-671.8	-1.35
10.0	1.10	1.13	1.17	1.89	2.80	3.90	10.0	1.47	1.30	1.18	1.0	-709.8	-1.42
20.0	1.02	1.08	1.14	1.81	2.61	3.52	20.0	1.46	1.30	1.18	10.0	-720.2	-0.69
34.1	1.02	1.09	1.15	1.84	2.57	3.35	34.1	1.45	1.29	1.18	34.1	-715.9	-0.67
50.0	1.03	1.10	1.16	1.85	2.57	3.39	50.0	1.46	1.31	1.19	50.2	-718.2	-0.65
77.8	1.05	1.12	1.17	1.88	2.72	3.76	77.8	1.52	1.35	1.23	82.3	-723.7	-0.52
100.0	1.06	1.12	1.18	1.80	2.57	3.33	100.0	1.55	1.38	1.26	100.0	-717.9	-0.49
136.0	1.08	1.14	1.19	1.77	2.45	3.12	136.0	1.59	1.43	1.31	130.5	-721.8	-0.72
165.2	1.10	1.16	1.21	1.84	2.59	3.32	165.2	1.68	1.51	1.38	162.7	-704.2	-1.05
194.3	1.12	1.17	1.22	1.76	2.39	2.99	194.3	1.72	1.56	1.42	194.8	-706.0	-1.53
208.8	1.13	1.18	1.23	1.76	2.34	2.95	208.8	1.74	1.59	1.45	210.9	-708.2	-1.56
252.5	1.18	1.24	1.28	1.87	2.56	3.19	252.5	1.90	1.73	1.57	243.0	-718.0	-1.83
281.6	1.20	1.26	1.30	1.80	2.43	3.06	281.6	1.94	1.77	1.61	275.1	-723.3	-2.91
310.7	1.24	1.26	1.33	1.83	2.47	3.11	310.7	1.95	1.80	1.64	307.2	-706.6	-3.24
339.9	1.28	1.33	1.39	1.92	2.54	3.15	339.9	2.14	1.95	1.75	339.4	-674.2	-3.34
369.0	1.30	1.34	1.38	1.89	2.45	2.99	369.0	2.14	1.95	1.75	371.5	-642.8	-3.19
393.1	1.33	1.36	1.41	1.95	2.59	3.21	393.1	2.16	1.97	1.78	403.6	-613.3	-3.29
441.8	1.37	1.39	1.44	1.88	2.55	3.12	441.8	2.27	2.11	1.86	435.8	-597.9	-3.37
470.9	1.37	1.40	1.45	1.91	2.52	3.06	470.9	2.21	2.07	1.83	467.9	-600.2	-5.58
500.0	1.40	1.42	1.47	1.92	2.52	3.10	500.0	2.30	2.17	1.88	500.0	-604.1	-3.89

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Page 2 of 2



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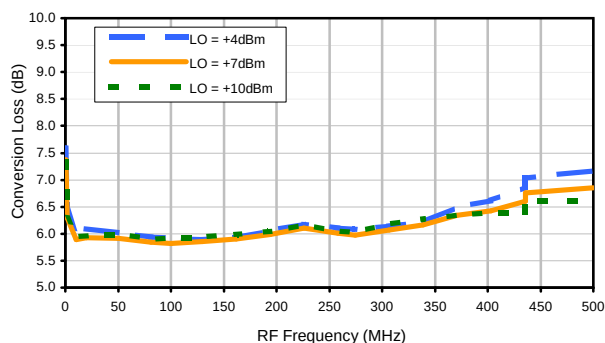


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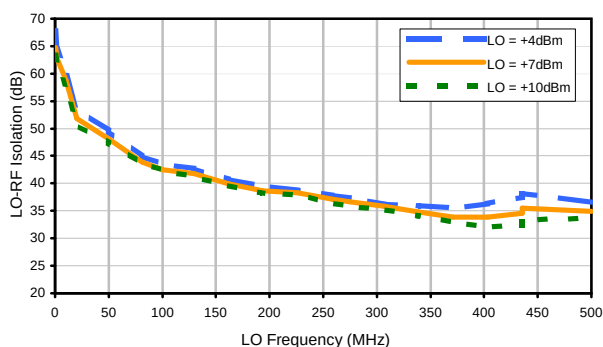


Typical Performance Curves

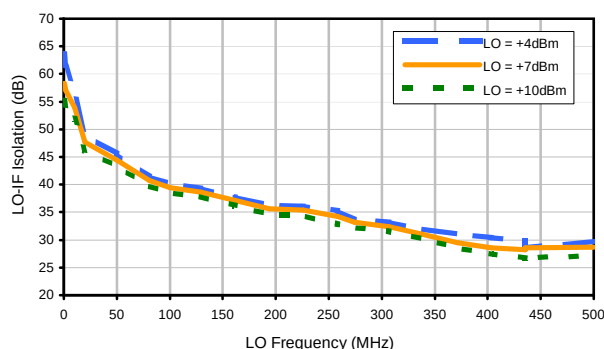
Conversion Loss



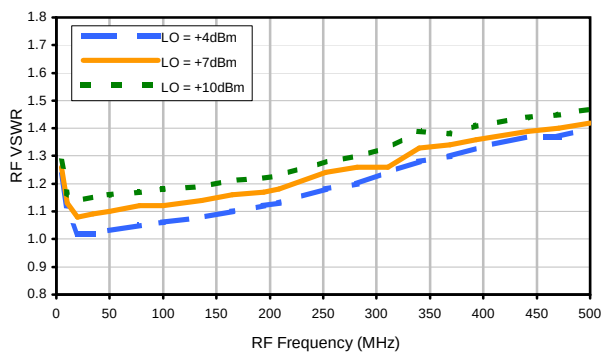
LO-RF Isolation



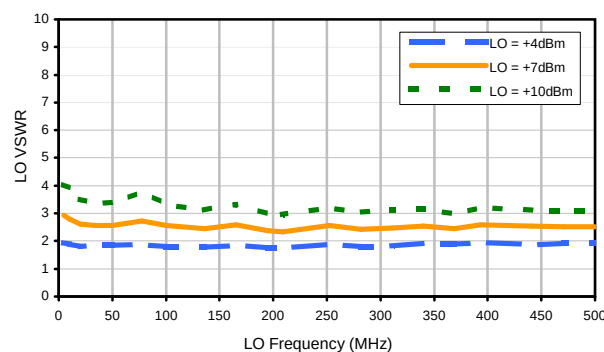
LO-IF Isolation



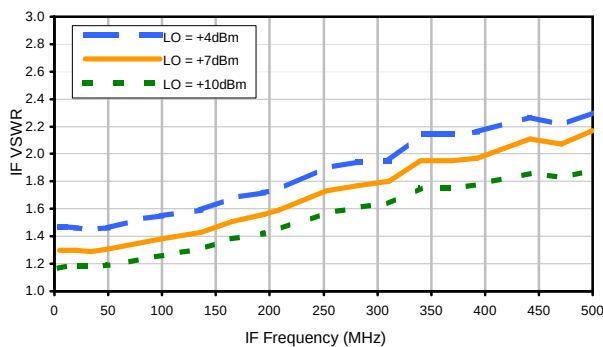
RF VSWR



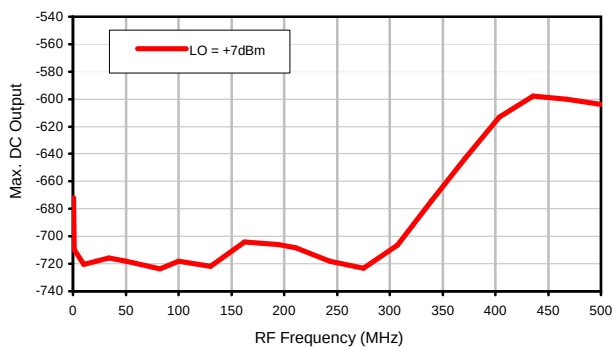
LO VSWR



IF VSWR



Max. DC Output



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